Eur J Vasc Endovasc Surg **21**, 79–80 (2001)
doi:10.1053/ejvs.2000.1233, available online at http://www.idealibrary.com on IDEAL®

CASE REPORT

Excessive Callus Forming at the Fibulotomy Site: an Uncommon Late Complication After Femoral-fibular Bypass

D. K. Wasowicz, C. C. vd Pol and F. L. Moll

Department of Surgery, St Antonius Hospital, Postbus 2500, 3430 CM Nieuwegein, The Netherlands

Key Words: Femoral-fibular bypass; Callus.

Introduction

Femoral-crural bypasses have been performed since the early 1960s. The fibular artery is one of the three arteries that can be used for distal anastomosis. To reach its distal segment a lateral approach with partial resection of the fibula offers space and a good view. One of the operation-related complications is bypass occlusion, which can have several causes.[1] In this article we describe a patient with repetitive occlusion of a femoral-fibular bypass caused by a mechanism which, to our knowledge, has never been described before.

Case Report

A 76-year-old man had been visiting our clinic for a long time because of peripheral occlusive vascular disease. He had been a heavy smoker for almost 50 years, his blood pressure was within limits with enalapril, and so was his cholesterol with simvastatine. His further medical history included a lumbar disc prolapse, nefrolithiasis, a meniscus lesion and a duodenic ulcer.

The patient had undergone several vascular interventions upon both legs. In 1999 a femoral-fibular PTFE bypass was performed on the left side by means of a lateral approach and partial resection of the fibula. The postoperative period was uncomplicated. As before, the patient was treated with coumarin derivates and at the day of discharge his prothrombine time was 3.2 International-Normalized-Ratio. At home he was free from complaints and able to walk his dog for hours.

Six months afterwards he presented with acute ischaemia of his left foot. The bypass appeared to be occluded and thrombolitic therapy was started. This cleared the bypass almost entirely: the occlusion persisted only at the distal anastomosis (which could not be seen clearly at angiography). Surgical exploration was performed. Here an excessive fibula regenerate was found, over which the graft was stretched tightly. The fibula was shortened another 2 cm proximally and a PTFE interponate was placed between the distal arteriotomy and the bypass. Postoperatively the foot was warm, with an ankle-brachial index of 1.0.

Another 5 months later the patient came to the emergency room with critical ischaemia again. The ankle-brachial index was 0.4 on the left side. Again thrombolytic treatment was started and again the occluded bypass could be opened until the distal end. There it appeared to be obstructed by an enormous amount of callus of the fibula (Fig. 1). Therefore thrombolysis could not succeed and bypass failure was a fact.

Discussion

In this case report mechanical obstruction, caused by excessive callus formation at the fibula osteotomy site, was the cause of bypass failure.

1078–5884/01/010079+02 $35.00/0

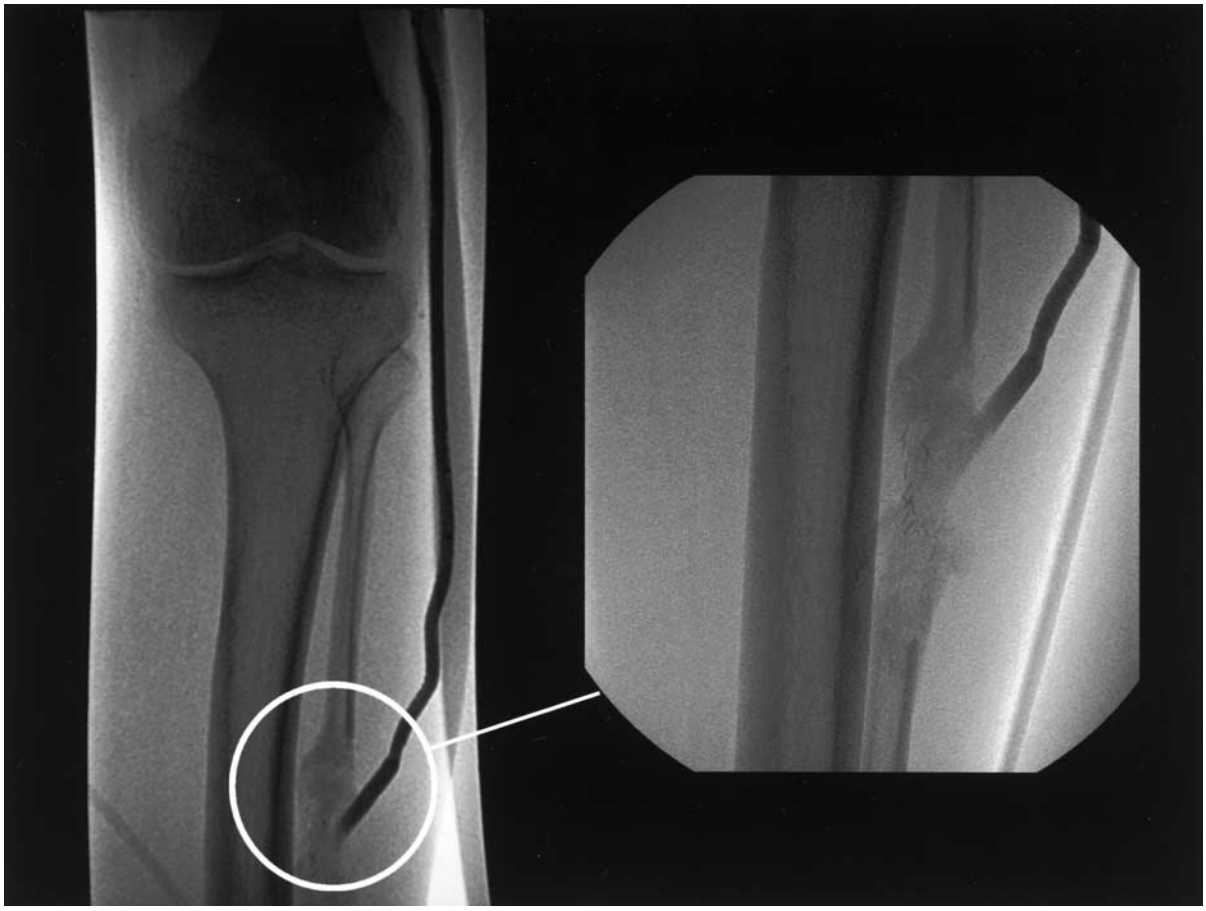

Fig. 1. Femoral-fibular bypass after thrombolytic therapy. It is occluded at the distal end by an enormous amount of callus at the fibulotomy site.

In traumatology excessive callus formation and heterotopic ostification have been described before: predisposing factors are total hip arthroplasty, long intensive care stay, severe head injury and skin burning.[2,3] The exact pathophysiology remains unknown. Antiphlogistica and radiotherapy may prevent heterotopic ossifications and relapse of ossifications after excision.[4,5]

In our case none of the predisposing factors were present and the pathophysiology remains absolutely incomprehensive. Looking back, we can suggest that after the first revision the patient could have been treated with indocid. Excessive callus formation is a remarkable but rare cause of bypass occlusion.

References

1 van de Pavoordt HDWM. De femoro-crurale bypass, een onderzoek over tien jaar. Utrecht uitgeversmaatschappij huisartsenpers B.V., 1985.
2 Eulert J, Knelles D, Barthel T. Hetrotope Ossifikationen. *Unfallchirurg* 1997; **100**: 667–674.
3 van Aanholt PCT, Martina JD, Eisma WH. Heterotopic ossification: prevention, diagnostics and treatment. *Ned Tijdschr Geneeskd* 1991; **135**: 380–384.
4 Schmidt SA, Kjaersgaard-Andersen P, Pedersen NW *et al*. The use of indomethacin to prevent the formation of heterotopic bone after total hip replacement. A randomized double blind clinical trial. *J Bone Joint Surg Am* 1988; **70**: 834–838.
5 McAuliffe JA, Lauderdale F, Wolfson AH. Early excision of heterotopic ossification about the elbow followed by radiation therapy. *J Bone and Joint Surg Am* 1997; **79a**: 749–755.

Accepted 18 October 2000